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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,120	05/10/2001	Yoshiharu Hirakata	07977/275001US4910	7408

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EXAMINER
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POMPEY, RON EVERETT

ART UNIT	PAPER NUMBER
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2812

MAIL DATE	DELIVERY MODE
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11/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/854,120

Applicant(s)

HIRAKATA ET AL.

Examiner

Ron E. Pompey

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on telephone interview 9-26-07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 is/are allowed.
- 6) ☒ Claim(s) 1,6-8 and 15 is/are rejected.
- 7) ☒ Claim(s) 9-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubal et al. (US 6704086), in view of Mikami (US 6115017).

Dubal discloses the limitations of:

Claim 1: providing a liquid crystal layer between a plurality of pixel electrodes and an electrode opposite to said pixel electrodes (col. 1, Ins. 54-59; and col. 3, In. 25 – col. 4, In.12), wherein liquid crystals of said liquid crystal layer have bistability or hysteresis characteristics (col. 2, Ins. 22-42); and

making said liquid crystals monostable by applying an electric field between said pixel electrodes and said electrode opposite to said pixel electrodes in such a manner that all of said pixel electrodes are given a fixed electric potential during a common time period (col. 3, 4-12).

Dubal, as indicated above, discloses all the features of the claims except:

Claim 1: supplying an electric charge to respective capacitors connecting to said pixel electrodes; fixed electric potential from said respective capacitors;

Claim 6: forming a first conductive film over a first substrate;

forming a first insulating film over said first conductive film;

forming a thin film transistor over said first insulating film, wherein the thin film transistor includes at least a semiconductor layer, a gate insulating film and a gate electrode;

forming a second insulating film over the thin film transistor;

forming a pixel electrode over the second insulating film;

forming a second conductive film over a second substrate.

a. However, Mikami discloses:

supplying an electric charge to respective capacitors (11, fig. 2/fig. 7) connecting to said pixel electrodes; fixed electric potential from said respective capacitors (col. 5, ln. 53 – col. 6, ln. 17);

forming a first conductive film (54, fig. 7) over a first substrate;

forming a first insulating film (16, fig. 7) over said first conductive film;

forming a thin film transistor over said first insulating film (51, fig. 7) wherein the thin film transistor includes at least a semiconductor layer, a gate insulating film and a gate electrode;

forming a second insulating film over the thin film transistor(52, fig. 7);

forming a pixel electrode over the second insulating film (7, fig. 7) (col. 7, lns. 6-56);

forming a second conductive film over a second substrate (9, fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the active matrix in Dubal, with the first and second

insulative film as taught by Mikami, because the insulating layers will reduce use of wafer area to integrate the pixel and the first conductive layer together and the capacitor will help hold the charge or memory state.

3. Claims 7-8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubal et al. (US 6704086), in view of Mikami et al. (US 6,108,061), and in further view of Sako et al. (US 6,108,061).

Dubal and Mikami do not disclose the claimed limitation(s) of:

while an ultraviolet ray is applied to said liquid crystals.

Wherein the step of making said liquid crystals monostable is conducted while applying light or heat to said liquid crystals.

However,

a. Sako discloses the above claimed limitations regarding:

while an ultraviolet ray is applied to said liquid crystals;

Wherein the step of making said liquid crystals monostable is conducted while applying light (ultraviolet ray) or heat to said liquid crystals. (col. 8, lns. 16-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Sako with Dubal or Mikami, because the ultraviolet ray forms a polymer reticulate structure, from the mixture of liquid crystal material and polymer material, producing a stable state for the liquid crystal elements in the liquid crystal material.

***Allowable Subject Matter***

5. Claims 2, 3 and 4 are allowed.

6. Claims 9-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, either singly or in combination, fails to disclose the limitations of: while electric voltages having the same polarity are applied to said pixel electrode and an ultraviolet ray is irradiated to said liquid crystals.

#### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwaki et al. (US 5,600,485) electric voltages having the same polarity are applied to said pixel electrode and an ultraviolet ray is irradiated to said liquid crystals.

Noguchi (US 5,040,875) voltage applied to opposing electrodes produce an electric field.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 6-15, received 8-2-07, have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E. Pompey whose telephone number is (571) 272-1680. The examiner can normally be reached on 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ron Pompey  
AU: 2812  
10/30/07

  
MICHAEL LEBENTRITT  
SUPERVISORY PATENT EXAMINER